# **Employees' Retirement System of Milwaukee County**

**Pension Board Meeting** 

**October 21, 2009** 



#### Report Items (April - September)

- On September 16, 2009, the trustees selected the following managers from the small-cap value and emerging markets searches: 1). Fiduciary Management (Small Cap Value), 2). Barings (Emerging Markets Equity).
- On July 17, 2009, the trustees voted and approved the following transitions to fulfill the new asset allocation.

Approx Liquidate:

Mellon LCG (\$63M)

Earnest (\$21M)

Artisan MCV (\$18M)

Westfield (\$33M)

AQR (\$11M)

FMA (\$43M)

Mellon S&P (\$10M)

- On July 12, 2009 the ERS received \$29,000,000 in cash proceeds from litigation. The funds were invested in the cash equitization program.
- On June 17, 2009, the trustees voted to initiate a public RFP for the following two new asset classes in accordance with the new asset allocation portfolio: 1). Long/Short Equity Fund of Funds and 2). Private Core Open-Ended Infrastructure.
- On June 30, 2009, the following asset transfers from the Pension Obligation Bond occurred: 1). \$35 million to Barings, 2). \$18 million to GMO Intl Large Cap, 3). \$13 million to GMO Intl Small Cap.
- On June 17, 2009, the following cash transfers from the Pension Obligation Bond were approved to fulfill part of the new target allocations: 1). \$35 million to Barings, 2). \$18 million to GMO Intl Large Cap, 3). \$13 million to GMO Intl Small Cap.
- On June 17, 2009, the trustees adopted a new asset allocation portfolio. Model Portfolio D was selected from the Marquette Associates asset allocation study. Moving forward the Fund's target allocations will be the following: 32% Core Fixed Income, 6% Passive Large Cap Core Equities, 7% Large Cap Value Equities, 5% Mid Cap Growth Equities, 5% Small Cap Value Equities, 12% Intl Large Cap Equities, 3% Intl Small Cap Equities, 3% Emerging Market Equity, 10% Long/Short Equity Fund of Funds, 7% Real Estate, 7% Infrastructure, and 3% Private Equity.
- On June 17, 2009, the trustees selected the following managers from the transition manager search: 1). Blackrock, 2). J.P. Morgan, 3). State Street, and 4). GTS.
- On June 2, 2009, the GMO Emerging Markets mutual fund was liquidated (\$2,736,571). The proceeds were invested in the GMO
- On June 1, 2009, the Capital Guardian Intl Small Cap Fund was terminated. The assets (\$35,235,446) were invested in the GMO Intl Small Cap mutual fund on June 2, 2009.
- On May 20, 2009, the trustees voted to initiate a public RFP for the following two asset classes: 1). U.S. Small Cap Value Equity and 2). Emerging Markets Equity.
- On May 6, 2009, the RFP for transition managers was initiated.
- On April 15, 2009, the trustees voted and approved the following recommendations: 1). Terminate Capital Guardian Intl Small Cap, 2). Eliminate GMO's asset allocation abilities to move assets between three funds, 3). Reassign Reinhart Partner's benchmark from the Russell Mid-Cap to the Russell Mid-Cap Growth.
- On April 3, 2009 BNY/Beta Management began the cash securitization program utilizing the Pension Obligation Bond proceeds per the investment guidelines.
- On April 2, 2009 the ERS received \$397,797,000 in cash proceeds from the issuance of the Pension Obligation Bond.

#### **Action Items**

• Discuss Infrastructure.

Investment	Manager	Status	Report	

Investment Manager	Asset Class	<u>Benchmark</u>	<b>Status</b>	Reason
J.P. Morgan	Core Fixed Income	BarCap Aggregate	In-Compliance	
Loomis	Core Fixed Income	BarCap Aggregate	In-Compliance	
Mellon Capital	Core Fixed Income	BarCap Aggregate	In-Compliance	
Loomis	High Yield Fixed Income	BarCap High Yield	In-Compliance	
Mellon Capital	Large-Cap Core Equity	S&P 500	In-Compliance	
Boston Partners	Large-Cap Value Equity	Russell 1000 Value	In-Compliance	
Mellon Capital	Large-Cap Growth Equity	Russell 1000 Growth	Termination	Asset Allocation
Earnest Partners	Mid-Cap Core Equity	Russell MidCap	Termination	Asset Allocation
Artisan Partners	Mid-Cap Value Equity	Russell MidCap Value	Termination	Asset Allocation
Reinhart Partners	Mid-Cap Growth Equity	Russell MidCap Growth	In-Compliance	
Artisan Partners	Mid-Cap Growth Equity	Russell MidCap Growth	In-Compliance	
AQR	Small-Cap Value Equity	Russell 2000 Value	In-Compliance	
Westfield	Small-Cap Growth Equity	Russell 2000 Growth	Termination	Asset Allocation
Barings	International Core	MSCI EAFE	In-Compliance	
GMO Large Cap Value	International Value	MSCI EAFE	In-Compliance	
GMO Intl Small Comp	International Small Core	Citigroup ex. US <\$2 Billion	In-Compliance	
Barings	Emerging Markets	MSCI EM		
ING Clarion	Real Estate REIT	NAREIT Equity	Termination	Asset Allocation
Progress	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Adams Street 2005	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Adams Street 2009	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 1998	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 1999	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 2000	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 2001	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 2002	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 2003	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Brinson 2004	Private Equity FoFs Diversified	VE All Private Equity	In-Compliance	
Separate Account - Old	Private Equity - Direct	VE All Private Equity	In-Compliance	
Separate Account - New	Private Equity - Direct	VE All Private Equity	In-Compliance	

#### **Investment Manager Evaluation Terminology**

The following terminology has been developed by Marquette Associates to facilitate efficient communication among the Investment Manager, Investment Consultant, and the Plan Sponsor. Each term signifies a particular status with the Fund and any conditions that may require improvement. In each case, communication is made only after consultation with the Trustees and/or the Investment Committee of the Plan.

*In-Compliance* – The investment manager states it is acting in accordance with the Investment Policy Guidelines.

<u>Alert</u> – The investment manager is notified of a problem in performance (usually related to a benchmark or volatility measure), a change in investment characteristics, an alteration in management style or key investment professionals, and/or any other irregularities.

<u>On Notice</u> – The investment manager is notified of continued concern with one or more Alert issues. Failure to improve upon stated issues within a specific time frame justifies termination.

<u>Termination</u> – The Trustees have decided to terminate the investment manager. The investment manager is notified and transition plans are in place.

## **Consolidated Market Values with Futures Exposure**

**September 30, 2009** 

Asset Class	Market Values	Allocation	Target
<b>Total Fixed Income</b>	\$814,379,096	45.0%	32.0%
Total U.S. Equity	\$547,153,567	30.3%	23.0%
<b>Total International Equity</b>	\$369,972,366	20.5%	18.0%
Total Long/Short Equity	\$0	0.0%	10.0%
Total Real Estate	\$40,306,478	2.2%	7.0%
Total Infrastructure	\$0	0.0%	7.0%
<b>Total Private Equity</b>	\$18,648,139	1.0%	3.0%
Total Cash/Cash Equivalents	\$17,569,817	1.0%	0.0%
TOTAL PORTFOLIO	<u>\$1,808,029,463</u>	<u>100.0%</u>	<u>100.0%</u>

### **Current Asset Allocation vs. Policy**

Asset Class	% of Assets	Target	Difference	Target Range
Fixed Income	45.0%	32.0%	13.0%	27%-47%
Domestic Equity	30.3%	23.0%	7.3%	16%-30%
International Equity	20.5%	18.0%	2.5%	13%-23%
Long/Short Equity	0.0%	10.0%	-10.0%	0%-15%
Real Estate	2.2%	7.0%	-4.8%	0%-10%
Infrastructure	0.0%	7.0%	-7.0%	0%-10%
Private Equity	1.0%	3.0%	-2.0%	0%-8%
Cash/Other	1.0%	0.0%	1.0%	0%-25%
TOTAL	100.0%	100.0%		

### **Market Values**

#### **September 30, 2009**

Asset Class	Investment Manager	Market Values	Allocation w/o POB	Allocation with POB	Target
Core Fixed Income	J.P. Morgan	\$117,532,482	6.5%	6.5%	16.0%
Core Fixed Income	Mellon Capital - Non Lending	\$309,690,726	17.1%	17.1%	16.0%
Core Fixed Income	Loomis	\$101,580,847	5.6%	5.6%	0.0%
High Yield Fixed Income	Loomis	\$118,940,619	6.6%	6.6%	0.0%
Cash Securitization	Pension Obligation Bond	\$166,634,422	==	9.2%	==
<b>Total Fixed Income</b>		\$647,744,674	35.8%	45.0%	32.0%
Large-Cap Core Equity	Mellon Capital - Non Lending	\$80,473,276	4.5%	4.5%	6.0%
Large-Cap Value Equity	Boston Partners	\$102,339,995	5.7%	5.7%	7.0%
Large-Cap Growth Equity	Mellon Capital - Lending	\$63,207,871	3.5%	3.5%	0.0%
Mid-Cap Core Equity	Earnest Partners	\$19,529,551	1.1%	1.1%	0.0%
Mid-Cap Value Equity	Artisan Partners	\$20,907,959	1.2%	1.2%	0.0%
Mid-Cap Growth Equity	Artisan Partners	\$21,311,435	1.2%	1.2%	2.5%
Mid-Cap Growth Equity	Reinhart Partners	\$18,319,634	1.0%	1.0%	2.5%
Small-Cap Value Equity	AQR	\$31,117,703	1.7%	1.7%	2.5%
Small-Cap Value Equity	Fiduciary Management	\$0	0.0%	0.0%	2.5%
Small-Cap Growth Equity	Westfield	\$33,394,932	1.8%	1.8%	0.0%
Cash Securitization	Cash Equity Overlay	\$2,301,361	0.1%	0.1%	
Cash Securitization	Pension Obligation Bond	\$154,249,850	=	8.5%	=
Total U.S. Equity		\$392,903,717	21.7%	30.3%	23.0%
International Core	Barings	\$112,699,107	6.2%	6.2%	6.0%
International Value	GMO Large Cap Value	\$117,088,267	6.5%	6.5%	6.0%
International Small Core	GMO Intl Small Companies	\$60,195,393	3.3%	3.3%	3.0%
Emerging Markets	Barings	\$0	0.0%	0.0%	3.0%
Cash Securitization	Pension Obligation Bond	\$79,989,599		4.4%	
Total International Equity		\$289,982,767	16.0%	20.5%	18.0%
Long/Short Equity	TBD	<u>\$0</u>	0.0%	0.0%	10.0%
Total Long/Short Equity		\$0	0.0%	0.0%	10.0%
•	DIC Chairm	•			
Real Estate REIT Real Estate - Core	ING Clarion TBD	\$40,306,478 \$0	2.2% <u>0.0%</u>	2.2% 0.0%	0.0% 7.0%
Total Real Estate	IBD				
Infrastructure - Core	TBD	\$40,306,478	2.2%	<b>2.2%</b> 0.0%	7.0%
	IBD	<u>\$0</u>	0.0%		7.0%
Total Infrastructure		\$0	0.0%	0.0%	7.0%
Private Equity FoFs Diversified	Progress	\$407,672	0.0%	0.0%	
Private Equity FoFs Diversified	Adams Street 2005	\$4,962,897	0.3%	0.3%	
Private Equity FoFs Diversified	Adams Street 2009	\$873,742	0.0%	0.0%	
Private Equity FoFs Diversified	Brinson 1998	\$392,454	0.0%	0.0%	
Private Equity FoFs Diversified	Brinson 1999	\$658,391	0.0%	0.0%	
Private Equity FoFs Diversified	Brinson 2000	\$2,447,998	0.1%	0.1%	
Private Equity FoFs Diversified	Brinson 2001	\$3,336,157	0.2%	0.2%	
Private Equity FoFs Diversified	Brinson 2002	\$1,753,512	0.1%	0.1%	
Private Equity FoFs Diversified	Brinson 2003	\$1,836,388	0.1%	0.1%	
Private Equity FoFs Diversified	Brinson 2004	\$1,882,333	0.1%	0.1%	
Private Equity - Direct	Separate Account - Old	\$5,675	0.0%	0.0%	
Private Equity - Direct	Separate Account - New	\$90,920	0.0%	0.0%	==
<b>Total Private Equity</b>		\$18,648,139	1.0%	1.0%	3.0%
Cash Short-Term	Active Reserve	\$383,470,664	21.2%	21.2%	
Cash Short-Term	General Cash	\$19,706,801	1.1%	1.1%	
Cash Securitization	Cash AA Overlay	\$8,816,597	0.5%	0.5%	
Cash Securitization	Pension Obligation Bond	\$400,873,871	22.2%	0.0%	
Cash Short-Term	Adjustment Account	<u>-\$394,424,245</u>	<u>-21.8%</u>	<u>-21.8%</u>	
<b>Total Cash Equivalents</b>		\$418,443,688	23.1%	1.0%	0.0%
TOTAL PORTFOLIO		<u>\$1,808,029,463</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

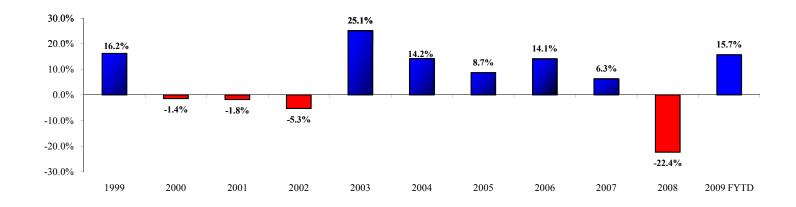
TOTAL PORTFOLIO
S1.808.029.463
New investment not yet funded
Illustration of the Pension Obligation Bond current investment breakdown in each asset class. Not included in the asset class market market value.

## **Annualized Performance (Gross of Fees)**

**September 30, 2009** 

	3.64	V/TD	1 37	2.37	2.37	437	<b>5</b> 37	<b>7.3</b> 7	10.37
	Mth.	YTD	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year
<b>Total Fund Composite</b>	3.4%	15.7%	2.8%	-5.8%	0.3%	2.8%	5.1%	8.6%	5.7%
Benchmark									
Policy Benchmark <sup>1</sup>	2.2%	10.5%	-3.7%	-9.1%	-2.0%	0.9%	3.2%	7.0%	3.8%
Actuarial Rate of Return			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
<b>Total Fixed Income Composite</b>	3.4%	15.1%	16.1%	7.8%	7.2%	6.6%	6.2%	7.3%	7.6%
Benchmark									
BarCap Aggregate	1.1%	5.7%	10.6%	7.1%	6.4%	5.7%	5.1%	5.0%	6.3%
<b>Total Domestic Equity Composite</b>	4.5%	25.4%	-4.3%	-12.1%	-3.5%	-0.5%	2.9%	7.8%	2.7%
Benchmark									
Wilshire 5000	4.1%	21.3%	-6.4%	-14.2%	-4.8%	-1.2%	1.8%	6.8%	0.9%
<b>Total International Equity Composite</b>	4.3%	27.4%	2.1%	-15.9%	-7.1%	-2.9%	0.4%	5.1%	3.3%
Benchmark									
MSCI EAFE	3.9%	29.6%	3.8%	-14.8%	-3.1%	2.1%	6.6%	11.4%	3.0%
<b>Total Real Estate Composite</b>	3.3%	26.9%	-9.6%	-16.8%	-10.0%	-1.3%	4.2%	9.9%	10.9%
Benchmark									
NAREIT Equity	6.4%	17.0%	-28.4%	-20.2%	-12.4%	-4.2%	1.4%	7.8%	9.5%

## ERS Fiscal Review as of September 30, 2009



## Annualized Performance (Gross of Fees) September 30, 2009

	Mth.	YTD	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year
Fixed Income - Core									
J.P. Morgan	2.2%	8.9%	13.9%	8.0%	7.1%				
Mellon Capital	1.4%	5.9%	10.9%	7.4%	6.6%	5.9%	5.3%	5.1%	6.4%
Loomis	4.4%	23.3%	23.7%	8.0%	7.7%	7.2%	6.8%	8.2%	9.0%
Benchmarks BarCap Aggregate	1.1%	5.7%	10.6%	7.1%	6.4%	5.7%	5.1%	5.0%	6.3%
Fixed Income - High Yield									
Loomis	9.4%	47.3%	26.1%	7.0%	6.8%	6.9%	7.2%	11.6%	9.1%
Benchmarks BarCap High Yield	5.7%	49.0%	22.3%	4.2%	5.3%	6.0%	6.1%	10.2%	6.3%
Large-Cap Core Equity Mellon Capital	3.5%	19.1%	-7.0%	-14.8%	-5.4%	-1.6%	1.1%	5.9%	-0.1%
Benchmarks S&P 500	3.7%	19.3%	-6.9%	-14.8%	-5.4%	-1.6%	1.0%	5.9%	-0.2%
Large-Cap Value Equity Boston Partners	3.5%	21.8%	-3.8%	-11.3%	-2.3%	1.3%	4.7%	9.2%	6.5%
Benchmarks Russell 1000 Value	3.9%	14.9%	-10.6%	-17.3%	-7.9%	-2.7%	0.9%	6.6%	2.6%
Large-Cap Growth Equity Mellon Capital	3.9%	26.7%	-2.2%	-12.0%	-2.6%	-0.5%	1.8%	5.8%	-2.6%
Benchmarks Russell 1000 Growth	4.3%	27.1%	-1.9%	-11.9%	-2.5%	-0.4%	1.9%	5.8%	-2.6%
Mid-Cap Core Equity									
Earnest Partners	5.9%	34.3%	-6.3%	-10.8%	-3.0%	-0.5%			
Benchmarks Russell MidCap	5.7%	32.6%	-3.6%	-13.5%	-4.1%	-0.8%	3.9%	9.9%	6.1%
Mid-Cap Value Equity									
Artisan Partners	3.6%	31.3%	1.5%						
Benchmarks Russell MidCap Value	5.6%	27.6%	-7.1%	-14.1%	-5.7%	-1.5%	3.5%	9.7%	7.4%
Mid-Cap Growth Equity									
Artisan Partners	6.5%	43.3%	3.8%	-9.8%	2.2%	3.7%	6.7%	10.7%	
Reinhart Partners	4.4%	28.7%	-4.4%	-12.7%	-3.6%	1.7%			
Benchmarks Russell MidCap Growth	5.8%	37.1%	-0.4%	-13.4%	-3.1%	-0.7%	3.8%	9.6%	2.2%
Small-Cap Value Equity									
AQR	6.5%	24.9%	-10.0%	-11.6%					
Benchmarks Russell 2000 Value	5.0%	16.4%	-12.6%	-12.4%	-6.7%	-1.9%	1.8%	8.8%	8.1%
Small-Cap Growth Equity									
Westfield	7.5%	30.9%	-4.0%	-9.9%	-0.8%	0.5%	3.4%	8.7%	
Benchmarks Russell 2000 Growth	6.6%	29.1%	-6.3%	-11.9%	-2.6%	-0.6%	2.9%	9.0%	1.1%

## Annualized Performance (Gross of Fees) September 30, 2009

	Mth.	YTD	1 Year	2 Year	3 Year	4 Year	5 Year	7 Year	10 Year
International Large-Cap Equity									
Barings	6.2%	27.8%	1.2%						
GMO Large Cap Value	2.6%	19.4%	-1.1%	-16.1%	-4.3%	1.1%	5.7%	11.7%	6.4%
Benchmarks									
MSCI EAFE	3.9%	29.6%	3.8%	-14.8%	-3.1%	2.1%	6.6%	11.4%	3.0%
International Small-Cap Equity									
GMO Intl Small Companies	4.2%								
Benchmarks									
Citigroup ex. US <\$2 Billion	6.2%	53.9%	18.3%	-13.5%	0.5%	4.5%	10.1%	16.9%	8.2%
<b>Emerging Markets Equity</b>									
Barings									
Benchmarks MSCI Emerging Markets	9.1%	64.9%	19.4%	-10.6%	8.3%	11.3%	17.7%	22.6%	11.7%
Real Estate - Equity									
ING Clarion	3.3%	26.9%	-9.6%	-16.8%	-10.0%	-1.3%	4.2%	9.9%	11.0%
Benchmarks NAREIT Equity	6.4%	17.0%	-28.4%	-20.2%	-12.4%	-4.2%	1.4%	7.8%	9.5%

Signifies Outperformance of Benchmark

## Estimated Annual Investment Management Fees based on September 30, 2009 reported Market Values

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee <sup>1</sup>	Industry Average <sup>2</sup>
Core Fixed Income	J.P. Morgan	0.20% on the first \$100 million 0.15% on the Balance	0.19% \$226,299	0.27%
Core Fixed Income Large-Cap Core Equity Large-Cap Growth Equity	Mellon Capital - Non Lending	0.08% on the first \$50 million 0.06% on the next \$50 million 0.04% on the next \$300 million 0.03% on the Balance	0.05% \$206,012	0.06%
Core Fixed Income	Loomis	0.20% on the first \$10 million 0.10% on the Balance	0.11% \$111,581	0.27%
High Yield Fixed Income	Loomis	0.20% on the first \$10 million 0.10% on the Balance	0.11% \$128,941	0.50%
Large-Cap Value Equity	Boston Partners	0.40% on the first \$15 million 0.30% on the next \$25 million 0.20% on the next \$25 million 0.15% on the next \$35 million 0.10% on the Balance	0.25% \$215,597	0.53%
Mid-Cap Core Equity	Earnest Partners	0.60% on the first \$25 million 0.50% on the next \$25 million 0.40% on the Balance	0.60% \$117,177	0.73%
Mid-Cap Value Equity	Artisan Partners	1.00% on the first \$10 million 0.75% on the next \$15 million 0.60% on the next \$15 million 0.50% on the Balance	0.87% \$181,810	0.80%
Mid-Cap Growth Equity	Artisan Partners	0.80% on the first \$50 million 0.60% on the next \$50 million 0.50% on the Balance	0.80% \$170,491	0.85%
Mid-Cap Growth Equity	Reinhart Partners	0.80% on the first \$50 million 0.60% on the next \$50 million 0.50% on the Balance	0.80% \$146,557	0.85%
Small-Cap Value Equity	AQR	1.00% on the first \$25 million 0.85% on the next \$50 million 0.75% on the Balance	0.97% \$302,000	1.00%
Small-Cap Growth Equity	Westfield	1.00% on the first \$25 million 0.75% on the next \$50 million 0.60% on the Balance	0.94% \$312,962	1.00%
International Core	Barings	0.75% on the Balance	0.75% \$845,243	0.73%
International Value	GMO Large Cap Value	0.67% on the Balance	0.67% \$784,491	1.17%
International Small Core	GMO Intl Small Companies	0.75% on the Balance	0.75% \$451,465	1.68%
Real Estate REIT	ING Clarion	0.65% on the first \$50 million 0.60% on the next \$50 million 0.55% on the next \$50 million 0.50% on the next \$50 million 0.45% on the next \$50 million 0.40% on the Balance	0.65% \$261,992	1.50%
Cash Securitization	BNY Beta Management	0.025% on the Notional Value	0.025% \$100,794	
Prepared by Marquette Asso	ciates, Inc.		•	8

<b>Total Investment </b>	Management Fees		0.25% \$4,563,413	0.54%
Custodian	BNY Mellon	\$50,000 Annual Fee	0.01% \$50,000	
<b>Total Fund</b>			0.26% \$4.613.413	

 $<sup>^1\,\</sup>rm Expense$ Ratio & Estimated Annual Fee are Based on Market Value at Quarter End.  $^2\,\rm Source$ : 2005 Marquette Associates Investment Management Fee Study.

#### Glossary

**Alpha** measures nonsystematic return, or the return of the manager that cannot be attributed to the market. It can be thought of as how the manager performed if the market has no gain or loss. Marquette calculates alpha as the annualized y-intercept of the best fit line based on the ordinary least squares regression, using the market's quarterly return less the risk-free rate as the independent variable and the manager's quarterly return less the risk-free rate as the dependent variable. Marquette uses the 90-day T-Bill returns as the risk-free rate.

**Beta** measures the volatility of the manager. It is a measure of systematic risk, or the manager return attributable to market movements. A beta equal to 1.0 indicates a volatility level equivalent to the market. Higher betas are associated with higher volatility levels, while lower betas are associated with lower volatility levels. Marquette calculates beta as the covariance (correlation of two assets multiplied by their standard deviation) divided by the variance (standard deviation squared) of the market.

**Credit Ratings** are a method of evaluating the possibility of default by a bond issuer. Marquette uses ratings issued by Moody's Investors Service with the following ratings:

Aaa	Highest Quality
Aa	High Grade, High Quality
A	Upper Medium Grade
Baa	Medium Grade
Ba	Non-Investment Grade
В	Speculative
Caa	Poor to Default
Ca	Highest Speculation
C	May Be in Default

Moody's uses the numerical modifiers 1 (highest), 2, and 3 in the range from Aa1 through Ca3.

**Equity yield** measures the annual return of the portfolio attributable to dividends. It is determined by dividing the total amount of annual dividends per total shares by the average market price of the total stocks in the portfolio.

**Market capitalization** is the value of a corporation as determined by the market price of its issued and outstanding common stock. It is calculated by multiplying the number of outstanding shares by the current market price of a share.

**Modified Duration** is the ratio of Macaulay duration to (1 + y), where y = the bond yield. Modified duration is inversely related to the approximate percentage change in price for a given change in yield.

**Net of Fees** calculations are an estimate of the performance of the total fund and individual managers after taking into account management fees. The estimate is calculated by subtracting the current estimated annual expense ratio from the historical gross of fee returns.

**Price-to-Book Ratio** is a measure of relative value measuring the weighted average of the individual portfolio's Price/Book ratios. The ratio is calculated by dividing the price of a stock by the book value of the company. Low Price/Book ratios are associated with value stocks and vice versa

### **Glossary**

**Price-to-Earnings Ratio** is a measure of relative value measuring the weighted average of the individual portfolio's Price/Earnings ratios. The ratio is calculated by dividing the price of a stock by the last twelve months' earnings of the company. Low Price/Earnings ratios are associated with value stocks and vice versa.

**R-Squared** measures how closely the manager's returns track the benchmark. The closer the R-squared statistic is to 1.0, the more closely related the manager's returns are to the benchmark. A higher R-squared also increases the reliability of alpha and beta.

**Sharpe Ratio** measures the excess return per unit of risk. The higher the ratio, the more efficient the manager. It is the average return of the manager minus the risk-free rate, divided by the standard deviation of the differences of the two return streams.

**Trading Effect** assesses the total performance caused by cash flows into and out of the portfolio, in addition to all purchases and sales of securities during the quarter. This effect is calculated by subtracting the buy and hold equity return of the portfolio from the actual equity return of the portfolio for the quarter.

**Yield to Worst** is computed by using the lower of either the yield to maturity or the yield to call on every possible call date.

Due to current market conditions, there is general uncertainty regarding credit pricing which has resulted in significant differences between pricing sources. Marquette Associates, Inc. utilizes pricing sources it believes to be reliable; however, we can make no assurances as to their accuracy.

The sources of information used in this report are believed to be reliable. Marquette has not independently verified all of the information contained herein.

This report has been prepared and presented in compliance with the IMCA Performance Reporting Standards. It meets the mandatory requirements of those standards. IMCA has not been involved with the preparation or review of the report.